

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
NORTHERN DIVISION

SEVERN PEANUT CO, INC., MEHERRIN
AGRICULTURE & CHEMICAL CO., and
TRAVELERS PROPERTY CASUALTY
COMPANY OF AMERICA as Subrogee of
Severn Peanut Co., Inc. and Meherrin
Agriculture & Chemical Co.,

Plaintiffs,

vs.

INDUSTRIAL FUMIGANT CO. and
ROLLINS INC.,

Defendants.

DOCKET NO. 2:11-cv-00014-BO

**DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF
MOTION TO EXCLUDE PLAINTIFFS' EXPERT WITNESSES**

Defendants Industrial Fumigant Co. ("IFC") and Rollins, Inc. ("Rollins"), by and through counsel, and pursuant to Rule 702 of the Federal Rules of Evidence, hereby supply their memorandum of law in support of their motion to exclude Plaintiffs' expert witnesses Lester V. Rich and John L. Schumacher.

STATEMENT OF THE CASE

This case arises out of a fire that destroyed Plaintiff Severn Peanut Company's ("SPC's") dome-shaped peanut storage warehouse and the approximately 21 million pounds of peanuts it stored at the time of the fire. Plaintiffs filed their original complaint on April 8, 2011. (DE #1). Defendants moved to dismiss the complaint on the basis that the damages sought were consequential damages excluded by the parties' contract. (DE #13-14). The motion was denied. (DE #26). On January 4, 2012, Plaintiffs amended their complaint to include Travelers Property Casualty Company of America as a plaintiff. (DE #34). An initial scheduling order was entered the following day and a final, revised scheduling order was entered on February 21, 2013. (DE

#36, 53). On May 6, 2013, Plaintiffs moved for partial summary judgment on Defendants' contributory negligence defense. (DE #54). The motion was denied. (DE #63). Discovery is now closed¹; dispositive motions are due November 27, 2013. (DE #53).

On May 1, 2013, Plaintiffs disclosed two expert witnesses they intend to have testify as to the origin and cause of the fire: (1) Lester V. Rich from Charleston, South Carolina and (2) John L. Schumacher from Denver, Colorado. Both submitted expert reports and, months following Plaintiffs' disclosure deadline, two supplemental reports; both have been deposed. Plaintiffs also disclosed testifying expert witnesses Dr. Steve Brown and Mr. John Mueller, both of whom have opined on the method of pesticide application employed by IFC's certified applicators Randy Turner and Brian Lilley. On October 8, 2013, Defendants moved to exclude certain post-report testing in which Messrs. Rich, Schumacher, and Mueller participated and related supplemental reports. (DE #64-65). Plaintiffs' memorandum in opposition to that motion is due on November 12, 2013. (Text Order 10/15/2013).

STATEMENT OF RELEVANT FACTS

Severn Peanut Company ("SPC") completed the construction of the dome-shaped peanut storage warehouse in 2005; the dome stood 96 feet high and 192 feet wide. Watson Dep. Vol. I pp. 163-64 & Ex. 44, p. 4 (Ex. A); Pls.' Answ. to Defs.' 1st Set of Interrogs. p. 5 (Ex. B). On top of the structure was a small "headhouse" through which a conveyor system dumped peanuts into the center of the dome. Watson Dep. Vol. I p. 177 & Ex. 11; Pls.' Answ. to Defs.' 1st Set of Interrogs. p. 5. On August 4, 2009, IFC's certified applicators Randy Turner and Brian Lilley, and their assistants James Ward and Lucas Bratton, arrived at the dome to perform a fumigation. Defs.' Resp. to Pls.' 1st Set of Interrogs. p. 3 (Ex. C). On that date, the dome contained

¹ Plaintiffs' rebuttal expert, Dr. Vytenis Babrauskus of Fire Science and Technology, Inc., was not available for deposition due to international travel prior to the discovery cutoff; the parties have agreed that his deposition may be taken in December 2013 notwithstanding the October 28 discovery deadline.

approximately 21 million pounds of “farmer stock” (in-shell, unprocessed) peanuts which had been loaded into the dome during the fall of 2008. Watson Dep. Vol. II p. 403 (Ex. D); Pls.’ Answ. to Defs.’ 1st Set of Interrogs. p. 7.

IFC’s applicators used a fumigant named “Fumitoxin,” which was distributed by Degesch America, Inc. (“Degesch”). Fumitoxin consists primarily of the chemical compound aluminum phosphide, formulated into small tablets, which is sold in cases containing 14 flasks, 500 tablets per flask. Ryman Expert Dep. pp. 68, 250 (Ex. E). When the flasks are opened and the tablets shaken out, the aluminum phosphide interacts with the humidity in the air to liberate pure phosphine gas, which is the agent that kills the targeted pests. *Id.* p. 128. The Fumitoxin applicator’s manual indicates that phosphine gas has a lower flammable limit (“LFL,” sometimes expressed as “lower explosive limit” (“LEL”)) of 18,000 parts per million, also expressed as 1.8% v/v. The manual contains the following precautionary statement:

Since phosphine may ignite spontaneously at levels above its lower flammable limit of 1.8% v/v, it is important not to exceed this concentration. Ignition of high concentrations of phosphine can produce a very energetic reaction. Explosion can occur under these conditions and may cause severe personal injury. ***Never allow the buildup of phosphine to exceed explosive concentrations.*** Do not confine spent or partially spent aluminum phosphine fumigants as the slow release of phosphide from this material may result in formation of an explosive atmosphere. Aluminum phosphide tablets and pellets, outside their containers, should not be stacked or piled up or contacted with liquid water. This may cause a temperature increase, accelerate the rate of gas production and confine the gas so that ignition could occur.

Turner Dep. Ex. 4, p. 4 (Ex. F, emphasis in original).

To commence their August 4, 2009 fumigation, the IFC applicators ascended to the headhouse with 98 flasks of Fumitoxin, which contained 49,000 tablets. They removed a metal cover at the end of the conveyor on the headhouse floor, exposing a hatch opening into the dome that measured 15 x 41 inches. Defs.’ Resp. to Pls.’ 1st Set of Interrogs. p. 3; Rich Expt. Rpt. p. 15 (Ex. G). Mr. Turner shined a flashlight through the opening at the peanuts. He and Mr.

Lilley observed that the peanut pile was in a conical shape, peaked at the top, with a small level area in the middle of the peak approximately 20 feet below the headhouse floor. Defs. Resp. to Pls.' 1st Set of Interrogs. p. 3. SPC's Vice President of Operations, R.P. Watson, testified that the top of the peanut pile was more likely 25 feet from the headhouse floor.² Watson Rule 30(b)(6) Dep. pp. 133-35 (Ex. H).

Messrs. Turner and Lilley applied the Fumitoxin tablets from opposite ends of the rectangular opening as follows:

[T]hey shook each flask side to side, using their elbows of the same arm holding the flask as a hinge to ensure maximum distribution across the peanut pile. Occasionally Mr. Turner also used his free hand to scatter some of the tablets across the peanut pile. When the 98 flasks were emptied, Mr. Turner used his flashlight to confirm that the Fumitoxin tablets were adequately scattered across the area of the peanut pile he could visualize and were not piled or clumped in any location.

Defs.' Resp. to Pls.' 1st Set of Interrogs. p. 3. Mr. Turner testified that, with the assistance of his flashlight, he "could see that the tablets had been scattered. They were all across the peanuts." Turner Dep. p. 174. Though he could not see all the way to the dome's walls, he could see "a lot" of the peanut pile. *Id.* Mr. Lilley testified that when he observed the peanut pile after the fumigant was applied, with the aid of Mr. Turner's flashlight, he "didn't see anything piled up[.]" Lilley Dep. p. 88 (Ex. I). He further testified that he scanned across the top of the peanut pile to search for a flask which had fallen through the opening and did not see any piling of tablets during that search. *Id.* p. 89.

On August 10, 2009, SPC employee Paul Lassiter detected the smell of smoke, but could not identify its source. On August 11, 2009, Mr. Lassiter observed smoke coming out of the

² SPC responded to an interrogatory propounded by Defendants as follows: "When observed on July 1, 2009 [by SPC employees], the pile was cone shaped and approximately 10 feet wide across the top of the cone. The pile was approximately 20-30 feet from the top at its center and sloped at a 30-35 degree angle." Pls.' Answ. to Defs.' 1st Set of Interrogs. p. 15.

headhouse, which was the first visible indication of a fire. Pls.' Answ. to Defs.' 1st Set of Interrogs. p. 20. The fire ultimately destroyed the 21 million pounds of peanuts and the dome.

PLAINTIFFS' EXPERTS' OPINIONS

Mr. Rich has been involved in approximately 1500 fire investigations. Rich Dep. pp. 25-26 (Ex. J). Yet only once before this case had he investigated a fire that had any possible relationship to aluminum phosphide. *Id.* p. 35. Likewise, of the approximately 500 fires Mr. Schumacher has investigated, only once before had he been involved in an investigation related to aluminum phosphide. Schumacher Dep. pp. 14, 26 (Ex. K).

A. Fumitoxin Tablets Were "Piled" on the Peanuts' Surface Directly Below the Hatch.

Mr. Rich has opined that the method of application employed by Messrs. Turner and Lilley "resulted in the piling and congregating of the Fumitoxin tablets[.]" Rich Expt. Rpt. p. 18. He stated in his expert report that the "irregular and varied slopes of the surface of the commodity would likely increase the risk of piling and collecting of Fumitoxin tablets as they fell 20 to 25 or more feet to the surface of the peanuts." *Id.* p. 15. Mr. Schumacher has opined that the application of Fumitoxin tablets "most probably led to piling in one or more locations" because IFC's applicators applied 49,000 tablets, could not control with any accuracy the distance and location of where they were applying them, the application occurred in approximately 30 minutes, and the peanut pile had a 10-foot flat section at the top with a surface that likely had dips in it, "creating locations for piling of tablets." Schumacher Expt. Rpt. pp. 12-13 (Ex. L).

Both Messrs. Rich and Schumacher were asked during their depositions how many piles of Fumitoxin tablets they believed resulted from the IFC application and how many tablets were in each such pile. Mr. Rich testified that there could have been more than ten piles of Fumitoxin

tablets on the surface of the peanut pile following the IFC application and that the piles likely consisted of more than 250 tablets each. Rich Dep. pp. 116, 121-22. Mr. Schumacher testified that he “would not be surprised if there were several” piles and that there would have been “significant piling” in each pile of “a hundred to 200 tablets possibly, maybe more.” Schumacher Dep. pp. 101-03.

Mr. Rich conceded that Messrs. Turner and Lilley were the only eye witnesses regarding the distribution of Fumitoxin tablets on the surface of the peanuts and that they testified that they did not observe any piles of tablets in the areas they could see. Rich Dep. pp. 256-61. Nonetheless, Mr. Rich testified that even though the total surface area of the peanut pile was approximately 66,000 square feet, the total surface area of the 49,000 Fumitoxin tablets was only 108 square feet – 0.16% of the peanut pile’s surface – and even with the effect of gravity aiding distribution of tablets during a 20-25 foot descent to the conical pile, piling of the Fumitoxin tablets would have, and did, occur. *Id.* pp. 261-69. His opinion was based solely on the “the configuration of the amount [of tablets], the surface, [and] the configuration of the dome[.]” *Id.* p. 117. Mr. Rich admitted that he had never even seen Fumitoxin tablets with his own two eyes or performed any physical testing to support his opinion that they piled together during the IFC application. *Id.* pp. 118, 262, 271.

Mr. Schumacher testified that Messrs. Turner and Lilley “created piles on the surface” of the peanut pile and that their testimony to the contrary was “wrong.” Schumacher Dep. p. 163. He testified:

Well, the constraints that Lilley and Turner were under when they were trying to apply the tablets: small opening, very constricted by the angle iron and other things in that area, the – what happens when you actually turn a flask of tablets over, the restriction on their arm movement when they’re trying to actually spread these out. It’s going to all basically create a condition where you’re going to have piling on the surface below them and in other areas.

Id. pp. 76-77. Yet he too performed no testing whatsoever to support his opinion. *Id.* p. 64.

Four months after forming their opinions that such piling had occurred on the surface of the peanut pile, Messrs. Rich, Schumacher, and a third expert witness, John Mueller, assembled in Memphis, Tennessee to test their piling theory. Mr. Schumacher testified that during such testing – which Defendants have moved to exclude (*see* DE #64-65) – he “created a condition that ***bolsters my opinion*** that when you distribute these things, you get a very large concentration of tablets directly below where they’re applying them[.]” Schumacher Dep. pp. 64-65 (emphasis added). When asked why he felt it necessary to engage in such post-report testing, Mr. Schumacher stated that he “just wanted to see the peanuts and how the tablets landed on them, how the tablets came out of the flasks, and it was consistent with what I thought was going to happen.” *Id.* p. 92.

Mr. Rich and Mr. Schumacher also rely on the deposition testimony of Dr. Steve Brown and Mr. John Mueller to bolster their opinions that piling would have occurred during the IFC Fumitoxin application. (*See* Rich Supp. Expt. Rpt., (Ex. M); Schumacher Supp. Expt. Rpt., (Ex. N)). Dr. Brown testified that “in my experience, I don’t see any way you could have scattered 98 flasks without having a pile.” Brown Dep. p. 60 (Ex. O). He testified that, in his opinion, a pile or multiple piles of Fumitoxin tablets would have formed on the flat spot at the very top of the peanut pile, directly below the hatch opening. *Id.* p. 76. Dr. Brown conducted no testing to support his theory; rather, his opinion was based solely on his experience. *Id.* pp. 63, 67.

Mr. Mueller testified that it was unavoidable that the IFC application would have resulted in “a significant amount of piling” of Fumitoxin tablets “directly below that hatch,” “20, 25 feet below his [Mr. Turner’s] nose.” Mueller Dep. pp. 99, 104, 106-07 (Ex. P). He testified that Messrs. Turner’s and Lilley’s testimony that they saw no piling directly beneath the hatch was

incorrect because piling “couldn’t have been avoided.” *Id.* p. 109. Yet he too conducted no testing to support his theory. *Id.* p. 98. Rather, his opinion was based solely on his personal experience. *Id.* p. 109.

B. *Piling of Tablets Led to Phosphine Gas Reaching LEL and Auto-ignition.*

In his report, Mr. Rich concluded that “[t]he piling or congregating of the tablets accelerated the reaction and created localized pockets of Phosphine gas in excess of the Lower Explosive Limit (LEL) of 1.8% by volume in air” upon which the phosphine gas “spontaneously ignited.” Rich Expt. Rpt. p. 18. Mr. Schumacher reached the same conclusion. Schumacher Expt. Rpt. p. 13.

Both Messrs. Rich and Schumacher were questioned extensively regarding the basis for their opinion that the phosphine gas, in localized piles, would have reached its LEL and spontaneously ignited. Mr. Rich testified that “[t]here’s evidence that supports the fact that when [aluminum phosphide is] piled together the [chemical] reaction spirals out of control, it increases, the – the controls built into the Fumitoxin tablets by the manufacturer are subverted because it’s all clumped together, and the reaction proceeds to a runaway condition.” Rich Dep. p. 135. Yet he was unable to cite to a single peer-reviewed, scientific journal article standing for that proposition.³ *Id.* p. 136. Moreover, he conceded that four different published reports by certified testing laboratories have demonstrated the occurrence of ignition in piles of aluminum phosphide tablets only when liquid water was added to the pile.⁴ *Id.* pp. 138-41. Mr. Rich also acknowledged that testing undertaken by Defendants’ expert witness Dale Mann of MDE Forensic Laboratories demonstrated the occurrence of ignition of piles of aluminum phosphide

³ Mr. Rich testified that Mr. Schumacher had written an article for an “ISFI” conference that might have been peer reviewed. *Id.* p. 136. Mr. Schumacher testified, however, that his article had not been through a peer-reviewed journal process. Schumacher Dep. p. 146-47.

⁴ Those reports were issued by Underwriters’ Laboratories, Inc. in 1961, 1964, and 1983, (Exs. Q, R, and S), and by Siemens Axiva in 2002 (Ex. T). Those reports are analyzed in the report of Defendants’ expert Dennis Ryman. *See* Ryman Expt. Rpt. pp. 5-8 (Ex. U).

tablets only when liquid water was added to the pile. *Id.* p. 141; *see* Mann Expt. Rpt. pp. 10-11 (Ex. V). When asked whether every laboratory testing result he had seen during the course of his investigation was to the effect that aluminum phosphide tablets, when piled together, do not combust in the absence of the introduction of liquid water, Mr. Rich responded: “Yes. That’s what the laboratory reports have suggested.” Rich Dep. p. 142.

In view of the absence of peer-reviewed literature supporting his opinion and five sets of laboratory testing contradicting it, Mr. Rich was asked whether it “might be important for you to do some kind of testing to show and demonstrate that piling of aluminum phosphide tablets, in fact, could result in either the lower flammable limit of phosph[i]ne gas being reached []or combustion?” *Id.* pp. 142-43. He responded, “Yes, I considered that possibility.” *Id.* p. 143. But he decided not to perform any such testing because “to really test that, you would have to recreate the entire geometry of the dome and the conditions, I believe.” *Id.* When asked what testing he had undertaken to support his opinion, Mr. Rich responded: “I have taken the scientific method and the cognitive test and the facts that are presented in this case and applied them and tested this hypothesis against all of the information, the literature, the facts, the witness statements, the – all the information that’s involved with the case.” *Id.* pp. 152-53.

Mr. Schumacher testified that when aluminum phosphide tablets are piled together, the phosphine is generated “at such a rate that you’re creating a concentration that’s at the LFL that you wouldn’t normally have if you had a single tablet.” Schumacher Dep. p. 107. When asked what testing he had conducted which allowed him to reach that opinion to a reasonable degree of scientific certainty, he testified that he had done “thought experiments.” *Id.* p. 108.

I’ve seen testing done by – by Dale Mann that shows exactly what I’m talking about. You have high concentrations in piles being generated. In fact, a couple of his tests he almost reached the LFL with a hundred tablets They could have added 20 percent, and logically that would have brought you to the LFL.

Id. When asked if there were forensic chemists in the Denver area who could have assisted him in demonstrating how the LFL of phosphine gas could be reached merely from a pile of aluminum phosphide tablets, Mr. Schumacher responded: “Oh, I’m sure. But in this particular case, I don’t need to do that to know that that’s going to happen.” *Id.* p. 109.

I don’t have to do a test here to tell you that the LFL will be reached and ignition will occur. The science shows it. Field experience shows it. . . All the – the manual shows it’s going to happen. They warn against it. So I don’t have to do that to know that it’s going to happen.

Id. p. 110. Mr. Schumacher testified that had he performed the same testing Mr. Mann conducted with more tablets, he would have demonstrated the phosphine gas reaching its LFL:

- Q: [Mr. Mann’s] testing demonstrates you can get as high as 15,000 parts per million.
- A: With a hundred tablets, correct. You add more tablets, you will reach the LFL.
- Q: So you’re saying if you went to a laboratory and said, “I’m going to do the same testing Dale Mann did, the exact same ambient conditions. We’re going to use a pile of 300 tablets,” you’re a hundred percent sure that you would get 18,000 parts per million, correct?
- A: I’m very confident you would, yeah.
- Q: Okay. And it wouldn’t be difficult to design that test? Heck, the test is already designed, isn’t it?
- A: It wouldn’t be difficult to design it?
- Q: You could – you could do the exact same thing that Dale Mann did and just increase the number of tablets and get your LFL, correct?
- A: Sure. I don’t need to do that, though. I know it’s going to happen. That’s the point.

Id. pp. 125-26; *see also id.* p. 116 (“I didn’t see the need to do it. There’s no value. I know it’s going to happen.”). He further testified that under proper laboratory conditions, at a certain pile size of aluminum phosphide tablets, the LFL of phosphine gas would be reached “almost every time It’s just a matter of science.” *Id.* p. 143. But when asked if it were that simple to

prove the correctness of his opinion, whether he should have performed such testing, he replied: “No, I don’t need to do it.”⁵ *Id.* p. 299.

ARGUMENT

A qualified expert witness may testify in the form of an opinion if his or her testimony: (1) is based on sufficient facts or data; (2) was derived through reliable principles and methods; and (3) is the result of the expert reliably applying those principles and methods to the facts of the case. Fed. R. Evid. 702. “[T]he Rules of Evidence . . . assign to the trial judge the task of ensuring that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 597 (1993). That determination is intended to prevent the factfinder from being unduly swayed by supposed expert judgments that in fact amount to nothing more than informed speculation. *Bryte v. American Household, Inc.*, 429 F.3d 469, 477 (4th Cir. 2005). Expert opinion must be based on “more than subjective belief or unsupported speculation.” *Daubert*, 509 U.S. at 590; *see also Glastetter v. Novartis Pharms. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (trial judge must screen out “subjective speculation that masquerades as scientific knowledge.”).

The first prong of the Court’s inquiry requires an examination of whether the reasoning or methodology underlying the expert’s proffered opinion is reliable – “that is, whether it is supported by adequate validation to render it trustworthy.” *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 260 (4th Cir. 1999); *Daubert*, 509 U.S. at 590 n.9. The second prong requires an

⁵ It is noteworthy that neither Mr. Rich nor Mr. Schumacher, prior to issuing their expert reports, were provided the fact deposition testimony of Dennis Ryman. Rich Dep. p. 271-72; Schumacher Dep. p. 171. Mr. Ryman serves as the Degesch’s technical director and plant manager, and is the company’s most knowledgeable employee regarding the fire hazards associated with the Fumitoxin tablets Degesch distributes. Ryman 30(b)(6) Dep. pp. 8, 159 (Ex. W). Mr. Ryman testified that he considered it “very unlikely” that the LEL of phosphine gas could be attained from the mere piling of Fumitoxin tablets because phosphine gas is very difficult to trap because it diffuses so readily. *Id.* pp. 85, 169-71; *see also* Ryman Expt. Rpt. p. 3 (“it would be very difficult to contain sufficient phosphine gas within the pile or stack to result in a localized concentration exceeding its LFL of 18,000 ppm.”).

analysis of whether the opinion is relevant to the facts at issue. *Westberry*, 178 F.3d at 260; *Daubert*, 509 U.S. at 591-92.

In determining whether the expert's theory or method is scientifically valid, the Court should consider:

- Whether the expert's theory can be verified by the scientific method through testing;
- Whether the expert's theory has been subjected to peer review;
- Whether the expert's method has been evaluated for its potential rate of error; and
- Whether the expert's theory enjoys general acceptance in the relevant scientific community.

Daubert, 509 U.S. at 593-94; *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149-50 (1999); *Anderson v. Westinghouse Savannah River Co.*, 406 F.3d 248, 261 (4th Cir. 2005). The expert witness must employ in the courtroom the same "intellectual rigor" that the expert normally applies in his field of expertise outside of the courtroom. *Kumho Tire*, 526 U.S. at 152. "[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert." *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). The party seeking admission of the proffered expert testimony bears the burden of establishing admissibility by a preponderance of the evidence. *Daubert*, 509 U.S. at 592 n.10.

I. PLAINTIFFS' EXPERTS' FIRE CAUSATION THEORIES LACK SCIENTIFIC FOUNDATION AND MUST BE EXCLUDED UNDER *DAUBERT*.

A. Plaintiffs' Experts' Theory that IFC's Application Resulted in Large Piles of Fumitoxin Tablets Accumulating on the Surface of the Peanuts Lacks Scientific Foundation.

The fire causation opinion proffered by Messrs. Rich and Schumacher is premised on their theory that the IFC Fumitoxin application resulted in the accumulation of large piles of at

least 100-200 tablets on the surface of the peanut pile, directly below the hatch opening.⁶ Yet they have no photograph documenting such piles. They have no circumstantial evidence that such piles existed. And the only direct evidence on the subject is squarely at odds with their theory – namely, Messrs. Turner’s and Lilley’s testimony that following the application they observed Fumitoxin tablets scattered across the peanuts below, not piled. *See supra* pp. 3-4. Indeed, when asked whether he could discredit the testimony of Messrs. Turner and Lilley, Mr. Rich conceded that he could not:

- Q So you would accept their testimony that, as far as they were able to see, there, in fact, were no piles of Fumitoxin tablets within the dome after their application was complete?
- A As – as we discussed earlier, I mean, this is their sworn statement, so I can’t – I wouldn’t disagree with that as to what they could see. No, sir.
- Q So based upon their testimony and you not disagreeing with it, the point of origin of this fire, in your opinion, had to be in a location that they could not see on August 4th, 2009; is that correct?
- A If this is accurate, yes.
- Q And I hear you saying you’re crediting their testimony and accepting it as accurate for purposes of this case. Correct?
- A I – I can’t disagree with what they’re saying. I mean, I don’t have a – yes, I guess I am. I can’t – I can’t disagree with it.

Rich Dep. pp. 257-58.

Moreover, Plaintiffs cannot demonstrate any scientific foundation supporting Messrs. Rich’s and Schumacher’s theory:

- Neither Mr. Rich nor Mr. Schumacher had engaged in any testing to verify their piling theory at the time they formulated and expressed that theory in their expert reports;
- They have not pointed to any peer-reviewed literature which supports their theory; and
- Nothing in the record, their expert reports, or their deposition transcripts establishes the general acceptance of their theory in the relevant scientific community.

⁶ Mr. Rich testified that the piles were likely greater than 250 tablets each; Mr. Schumacher testified that the piles would have included at least 100-200 tablets each. *See supra* pp. 5-6.

See Daubert, 509 U.S. at 593-94. Consequently, the existing data related to the IFC application is connected to Messrs. Rich's and Schumacher's piling theory only by their own "*ipse dixit*." *General Elec.*, 522 U.S. at 146. Because their theory is "based more on supposition than science," it is proper to exclude it from evidence. *O'Neill v. Windshire-Copeland Assocs., L.P.*, 372 F.3d 281, 285 (4th Cir. 2004).

The testing Messrs. Rich, Schumacher, and Mueller undertook in Tennessee four months after formally expressing their piling theory evidences their belated recognition that, under *Daubert*, they did not have an adequate scientific basis to support that theory and needed to create one. No other rationale explains why they conducted such testing four months after the fact when, as Mr. Schumacher readily agreed, they could have done so prior to issuing their reports. Schumacher Dep. pp. 91-92. As argued elsewhere, (*see* DE #65), their belated testing cannot serve as the missing scientific foundation for their piling theory because it was conducted well beyond the time Plaintiffs' experts were permitted to express their opinions.

In summary, were Messrs. Rich and Schumacher permitted to testify as to their piling theory, they would be doing so despite:

- Never having witnessed an aluminum phosphide application or the behavior of aluminum phosphide tablets falling 20-25 feet onto the surface of a cone-shaped commodity pile;
- Having conducted no admissible testing to support or verify their theory;
- There being no peer-reviewed literature supporting their theory or evidence of its general acceptance in the relevant scientific community; and
- Testimony from Messrs. Turner and Lilley standing in direct contradiction to their theory.

Thus, their piling theory is not based on "more than subjective belief or unsupported speculation" and must be excluded under *Daubert*. *Daubert*, 509 U.S. at 590.

B. Plaintiffs' Experts' Theory that Large Piles of Fumitoxin Tablets on the Surface of the Peanuts Caused the LEL of Phosphine Gas to Be Reached and Ignition to Occur Lacks Scientific Foundation.

Even were the Court to conclude that Messrs. Rich and Schumacher have an adequate scientific basis supporting their piling theory, they do not have an adequate scientific basis supporting their ignition theory.

1. Daubert required Plaintiffs' experts to attempt to falsify their ignition theory through physical testing.

Both Messrs. Rich and Schumacher consider the publication *NFPA 921: Guide for Fire & Explosion Investigations* (2008 ed.) (hereafter "*NFPA 921*") to be authoritative in the field of fire investigation.⁷ Rich Dep. p. 41; Schumacher Dep. pp. 42, 45. *NFPA 921* provides that a hypothesis as to the origin and cause of a fire is not provable "unless it can stand the test of careful and serious challenge." *NFPA 921* § 4.3.6 (Ex. Y). A fire investigator may turn a hypothesis as to the cause of a fire into a final cause opinion only if that hypothesis is "uniquely consistent with the facts, and with the principles of science." *Id.* Mr. Rich testified that under *NFPA 921*, a fire investigator must test his hypothesis as to the cause of a fire before he can turn that hypothesis into an opinion as to what caused the fire. Rich. Dep. p. 102. He agreed that his cause determination "would lack scientific foundation if [he] did not adequately test [his] hypothesis that became [his] cause determination[.]" *Id.* "A hypothesis can be tested either physically by conducting experiments or analytically by applying scientific principles in 'thought experiments.' . . . If the hypothesis cannot be supported, it should be discarded[.]" *NFPA 921* § 4.3.6. "Used as part of hypothesis testing, [physical] fire testing can assist in evaluating

⁷ *NFPA 921* "is widely recognized by the courts as a guide for assessing the reliability of expert testimony regarding fire investigations." *State Farm Fire & Cas. v. Jarden Corp.*, 2010 U.S. Dist. LEXIS 60327, at *11 n.3 (S.D. Ind. June 16, 2010) (unpublished and attached); see also *United States v. Aman*, 748 F. Supp. 2d 531, 536 (E.D. Va. 2010).

whether a hypothesis is consistent with the case facts and the laws of fire science.” *Id.* § 20.5.1.2.

In addition to *NFPA 921*, *Daubert* requires expert witnesses to test their hypotheses: “‘Scientific methodology today is based on generating hypotheses and **testing them to see if they can be falsified**; indeed, this methodology is what distinguishes science from other fields of human inquiry.’ ‘[T]he statements constituting a scientific explanation must be capable of empirical test[.]’” *Daubert*, 509 U.S. at 593 (emphasis added and citations omitted). As recently posited by the Maryland district court:

Testing, in particular, is often a key component of the *Daubert* inquiry, and the failure to properly test a hypothesis is often grounds for excluding expert testimony in this jurisdiction. . . . [C]ourts have also required experts to demonstrate that objects and materials are capable of behaving in the manner they hypothesize under the conditions of the event in question.

Fireman’s Fund Ins. Co. v. Tecumseh Prods. Co., 767 F. Supp. 2d 549, 554-55 (D. Md. 2011) (citations omitted). The Advisory Committee Notes to Rule 702 state that the testability of an expert’s opinion allows the court to distinguish between a theory that “can be challenged in some objective sense, or whether it is instead simply a subjective, conclusory approach that cannot reasonably be assessed for reliability.” Advisory Committee Note, 2000 Amendments.

The *Fireman’s Fund* case well illustrates these principles. Like this case, *Fireman’s Fund* was a property damage case resulting from a structure fire – there, a room of a Hilton Garden Inn. The subrogated insurer there retained two certified fire investigators, one of whom was Kenneth McLauchlan. McLauchlan concluded that a heat pump in the hotel room was the only plausible source of ignition. 767 F. Supp. 2d at 551. His report concluded that the fire was most likely caused by a high-resistance heating fault in the internal contact surfaces of the thermal overload protector within the heat pump and that the initial source of the heating fault, pitting, was the result of a manufacturing defect. *Id.* at 553. The district court concluded that

McLauchlan did not have a reliable scientific basis for his opinion and excluded it. *Id.* at 556. Aside from finding his opinion highly speculative, the district court found significant that “McLauchlan never tested his hypothesis, as both courts and *NFPA 921* emphatically require.” *Id.* at 555. The court stated that McLauchlan was obligated “to gather data or create conditions ***that might falsify his explanation***, which is what testing, in its scientific sense, means.” *Id.* (emphasis added). Simply “imagin[ing] a sequence of events that would be consistent with his observations” was “plainly insufficient.” *Id.*

At a minimum, a proper test of McLauchlan’s hypothesis would have involved either some attempt to replicate the process he claims ultimately led to the fire, or else some form of documentary evidence of the same process occurring elsewhere. Exactly how rigorous such a test would need to be to meet *Daubert*’s threshold of reliability is not at issue in this case; it is a sufficient basis for excluding McLauchlan’s testimony to observe that he performed no testing at all.

Id.

The Maryland district court similarly excluded an expert opinion for lack of testing in *Peters-Martin v. Navistar Int’l Transp. Corp.*, 2008 U.S. Dist. LEXIS 123392 (D. Md. Aug. 14, 2008) (unpublished and attached), *aff’d*, 410 Fed. Appx. 612, 2011 U.S. App. LEXIS 2583 (4th Cir. Feb. 9, 2011) (unpublished and attached). *Peters-Martin* was a traffic accident case in which the plaintiff’s vehicle was rear-ended in a multiple-vehicle collision which commenced when a commercial truck was unable to stop while descending a hill. *Id.* at *2. The plaintiffs asserted that the booster and push-rod components of the truck’s hydraulic brake system were defective. *Id.* at *4. The plaintiff’s expert, Dr. Bissell, concluded that the grommet connecting the push rod to the booster failed when the temperature in that location exceeded 250 degrees. *Id.*

The district court found Dr. Bissell’s opinion to be unreliable: “He did not cite any research for his conclusion, nor did he conduct any independent testing to determine whether

heat would cause the grommet to become soft and distorted as he hypothesized.” *Id.* at *17. The district court observed that it would have been simple for him to test his hypothesis that temperatures in the location of the grommet would have exceeded 250 degrees, but that he “did not even conduct a laboratory test with a control truck to determine a range of possible temperatures.” *Id.* at *21. Instead, Dr. Bissell relied on a technical manual which warned against allowing the unit to be exposed to temperatures above 250 degrees. *Id.* at *22. “Without testing, however, it is impossible to conclude that the grommet could have been exposed to such high temperatures.” *Id.* In affirming the district court opinion, the Fourth Circuit held that Dr. Bissell’s lack of testing, among other things, rendered his “extreme heat” theory “pure speculation.” 410 Fed. Appx. at 621, 2011 U.S. Dist. LEXIS 2583, at *24-25.

Numerous courts outside the Fourth Circuit have also excluded experts’ causation opinions for failure to confirm their hypotheses – or attempt to falsify them – through physical testing. The Seventh and Eighth Circuits have been particularly active in this area. In *Fuesting v. Zimmer, Inc.*, 421 F.3d 528 (7th Cir. 2005), the plaintiff sued the manufacturer of his prosthetic knee implant claiming that it had been improperly sterilized at the time of its manufacture. *Id.* at 531. That theory was advanced by his expert James Pugh, who opined that the method of sterilization utilized caused the implant’s polyethylene to oxidate, delaminate, and fail. *Id.* The district court denied the defendant’s motion to exclude Pugh’s testimony under *Daubert* and the resulting trial ended in a plaintiff’s verdict. *Id.* at 532. The Seventh Circuit panel reversed, concluding, first and foremost, that Pugh’s analysis did not comport with the scientific method. *Id.* at 536. The court based this conclusion on Pugh’s failure to conduct “any scientific tests or experiments to bolster his theory relating polyethylene delamination to gamma irradiation in air, nor did he produce or rely upon any studies to verify his conclusions. Such insulation of his

theory from the dispassionate crucible deeply, if not fatally, compromises his testimony's reliability." *Id.* (citation omitted). The court concluded that "[s]ome greater methodology is required to bridge the analytical gap between general principles and particular conclusions, and to vest thereby the opinion with requisite reliability." *Id.* at 536.

Of like significance is *Chapman v. Maytag Corp.*, 297 F.3d 682 (7th Cir. 2002), a case in which the plaintiff's decedent was electrocuted when he touched a metal surface energized by a current emanating from a Maytag range in his residence. The case was tried to a jury and resulted in a plaintiff's verdict. *Id.* at 686. On appeal, Maytag contended that the plaintiff's expert should have been excluded under *Daubert*. The plaintiff's expert, James Petry, had testified at trial that the insulation enclosing a pinched wire had become compromised, allowing a fatal amount of electrical current to leak through the insulation. *Id.* at 687. Yet Petry had not done any testing to support his "resistive short" theory. *Id.* at 688. The Seventh Circuit panel held that "the absence of any testing indicates that Petry's proffered opinions cannot fairly be characterized as scientific knowledge" and that his opinions "amount to nothing more than unverified statements unsupported by scientific methodology." *Id.*

The case of *Gaskin v. Sharp Electronics Corp.*, 2007 U.S. Dist. LEXIS 65532 (N.D. Ind. Aug. 31, 2007) (unpublished and attached) arose from a house fire in which the plaintiffs claimed that a Sharp television caught fire in the plaintiff's decedent's bedroom. The plaintiff's primary expert witness was an electrical engineer named Dennis Dyl. He concluded that the Sharp TV failed internally near the back of the picture tube, which then ignited the television's plastic cabinet. *Id.* at *4-5. Dyl did not perform any testing on an exemplar. *Id.* at *20. The plaintiff contended that Dyl had satisfactorily conducted testing by applying deductive reasoning,

as permitted by *NFPA 921*. *Id.* at *21. The district court disagreed, stating that *NFPA 921* did not excuse Dyl's lack of physical testing. *Id.*

Although Dyl did perform some deductive reasoning to support his hypothesis in this case, this Court is troubled that Dyl did not conduct any scientific tests or experiments to bolster his theory that a poor connection between a pin and the CRT board increased electrical resistance, which created heat, caused the fire, and ignited the polymer cabinet and nearby combustibles. Rather than relying upon specific tests, experiments, or studies, Dyl has attempted to rely on "common and basic principles." . . . The Court believes that the main problem here is that Dyl did not bridge the analytical gap between the basic principle that a poor connection can cause heat, and his very complex conclusions about how this specific fire started in this specific Sharp television.

Id. at *24-26.

The Eighth Circuit addressed these same issues in *Presley v. Lakewood Eng'g & Mfg. Co.*, 553 F.3d 638 (8th Cir. 2009) and *Pro Service Auto., L.L.C. v. Lenan Corp.*, 469 F.3d 1210 (8th Cir. 2006). *Presley* involved a house fire which the plaintiffs alleged commenced when an oil-filled space heater manufactured by the defendant malfunctioned. Their expert, Raymond Arms, opined that the fire was caused by a high-resistance wire connection in the control panel which became hot due to a defective crimp on the connection. *Id.* at 641. Arms did not perform any scientific testing to support his theory and averred that the fire events could not be replicated in a laboratory experiment. *Id.* at 642. Following a *Daubert* hearing, the district court excluded Arms's testimony. *Id.* at 643. The Eighth Circuit panel affirmed, principally because Arms's lack of testing left him with no scientific foundation for his opinion:

Arms testified he did not perform, and was not privy to, any testing showing an improperly crimped connection would produce conditions for ignition. Arms also testified he did not test either the amount or rate of gas produced by heated wire insulation from the exemplar heaters. Likewise, Arms failed to provide a scientific study which supported his ignition theory.

Id. at 645-46 (citations omitted). Consequently, the court held, Arms's opinion was the product of his own speculation. *Id.* at 646.

Pro Service also involved a structure fire allegedly resulting from a malfunction of an oil heater. The plaintiffs' expert, Alan Bullerdiek, was a chemical engineer and heating equipment expert. 469 F.3d at 1213. His theory was that a hole in the target wall of the combustion chamber of the heater allowed hot spots to form inside the heater which could result in a series of heat transfers through the heater cabinet that eventually would reach the environment in sufficient amounts to ignite nearby combustibles. *Id.* at 1215. The Eighth Circuit panel held that this causation opinion was properly excluded because Bullerdiek "provided no testing or mathematical analysis to quantify, even as a rough estimate, how much heat would be transferred through these processes and how it would compare to the heat necessary to ignite the combustibles." *Id.* at 1213.

Three cases from the Minnesota district court are particularly instructive regarding an expert's failure to physically test his or her fire causation theory. *See Werth v. Hill-Rom, Inc.*, 856 F. Supp. 2d 1051 (D. Minn. 2012); *Solheim Farms, Inc. v. CNH America, LLC*, 503 F. Supp. 2d 1146 (D. Minn. 2007); *American Family Ins. Group v. JVC Americas Corp.*, 2001 U.S. Dist. LEXIS 8001 (D. Minn. Apr. 30, 2001) (unpublished and attached). In *Werth*, a fire erupted in a baby bassinet resulting in severe burns to a new-born child. 856 F. Supp. 2d at 1053. The plaintiff's experts opined that a hot particle had broken off the affiliated baby warmer and fallen into the bassinet, igniting flammable bedding material. *Id.* The district court commenced its analysis of the defendants' *Daubert* motion by noting that, under *NFPA 921* § 4.3.6, investigators must test their hypotheses about the fire's cause. *Id.* at 1060. The district court excluded the plaintiff's experts based on their failure to perform "physical tests" to confirm their hypothesis. *Id.* at 1061. Absent such testing, the plaintiff's expert opinion amounted to nothing

more than “possibilities and conjecture” as to what might have happened, not an admissible opinion as to how the incident actually happened. *Id.* at 1061-62.

In *Solheim Farms*, a fire destroyed a farm tractor that the defendant had manufactured. The plaintiff’s expert, Jerry Tasa, identified the cause of the fire as an accumulation of field trash on the air cleaner; he surmised that the hot engine components ignited the trash and that an air stream then carried the ignited trash to the air cleaner cavity area, where other field trash was then ignited. 503 F. Supp. 2d at 1148-49. The district court concluded that Tasa’s opinion was not reliable “because Tasa failed to perform any tests to verify his causation theory.” *Id.* at 1150. The court noted that Tasa could have, but did not, test an exemplar tractor to confirm the buildup of trash in the air cleaner area and how such buildup could produce a fire. *Id.* “The complete lack of testing renders Tasa’s opinion unreliable.” *Id.* at 1151.

American Family arose from a house fire. The plaintiff’s expert, Daniel Choudek, opined that a defect in a CD player manufactured by the defendant caused the fire. 2001 U.S. Dist. LEXIS 8001, at *2-3. He concluded that some form of mechanical stress had been applied to the CD player’s attachment pins, thereby resulting in localized heating and eventual combustion. *Id.* at *10-11. Yet Choudek did not perform any testing to determine whether such stress could occur and how much stress was required to generate sufficient heat energy to ignite a fire. *Id.* at *11. “Consequently, Choudek’s opinion that mechanical stress occurred at the point of the attachment pins resulting in fire is pure speculation.” *Id.* at *12. His opinion was therefore unreliable and inadmissible under *Daubert*. *Id.* at *13.

Several other federal courts have also concluded that an expert’s failure to test his or her causation theory renders it excludable under *Daubert*. In *United Fire and Casualty Co. v. Whirlpool Corp.*, 2011 U.S. Dist. LEXIS 106595 (N.D. Fla. Sept. 20, 2011) (unpublished and

attached), *aff'd in part, rev'd in part on other grounds*, 704 F.3d 1338 (11th Cir. 2013), the plaintiff's causation expert was Raymond Arms – the same expert excluded from testifying in the Eighth Circuit's *Presley* case. Arms opined that a clothes dryer caused a fire in the plaintiff-subrogor's home when an internal wire faulted within a tube which generated resistance and heating between the wire and the tube. *Id.* at *6. The district court concluded that Arms's opinion was unsubstantiated, and failed to meet the *Daubert* standard, because he “failed to perform any tests that would support his opinions.” *Id.* at *7-8. The court observed that although *NFPA 921* does not require testing, “in an area such as the fire sciences, testing is an important way to show reliability.” *Id.* On appeal, the Eleventh Circuit panel “agree[d] with the district court's holding” excluding Arms from testifying about his ignition theory. 704 F.3d at 1341.

The Eastern District of Michigan addressed the same issue in *Meemic Ins. Co. v. Hewlett-Packard Co.*, 717 F. Supp. 2d 752 (E.D. Mich. 2010). *Meemic* involved a house fire. One of the plaintiff's experts was an electrical engineer named Michael McGuire. McGuire concluded that the cause of the fire was a failure in a printer's AC power adapter. *Id.* at 763. The district court held that his opinion could not be considered reliable when McGuire failed to perform any testing or rely upon the testing of others relating to the power adapter's alleged failure. *Id.* Consequently, he failed to show that the power adapter could have failed or even was capable of causing a fire. *Id.* at 765.

Finally, in *Maldonado v. Walmart Store #2141*, 2011 U.S. Dist. LEXIS 50255 (E.D. Pa. May 9, 2011) (unpublished and attached), the plaintiff's decedent was a one-year-old boy who drowned in an inflatable swimming pool sold by the defendant. Among the plaintiff's experts was a Dr. Osinski, who opined that the child had become entrapped between the inflatable ring

and the vinyl pool material. *Id.* at *23. Recognizing that a “key question” under *Daubert* is whether the expert’s theory can be and has been tested, the district court found Dr. Osinski’s opinion legally deficient because she failed to test whether a small child could actually become entrapped between the inflatable ring and vinyl pool material. *Id.* at *30. “Because Dr. Osinski failed to test her hypotheses, she has failed to satisfy the first *Daubert* factor.” *Id.* Consequently, the court concluded that her proposed testimony was merely “*ipse dixit*” incapable of withstanding *Daubert* scrutiny. *Id.* at *32. *See also Oddi v. Ford Motor Co.*, 234 F.3d 136, 158 (3rd Cir. 2000) (excluding expert opinion where expert failed to verify theory with testing); *Chester Valley Coach Works v. Fisher-Price, Inc.*, 2001 U.S. Dist. LEXIS 15902, *39 (E.D. Pa. Aug. 29, 2001) (unpublished and attached; same).

The fifteen cases cited above – including two from a district court within the Fourth Circuit – leave little doubt that, under *Daubert*, the ignition theory posited by a fire causation expert must be grounded on more than “cognitive testing” or “thought experiments.” As will be discussed below, however, that was the only testing performed by Messrs. Rich and Schumacher.

2. *Plaintiffs’ experts did not attempt to confirm or falsify their ignition theory through physical testing even though they recognized that numerous published test reports reached results contrary to their theory.*

Messrs. Rich and Schumacher arrived at the identical ignition theory: that the large piles of Fumitoxin tablets they theorized accumulated on the surface of the peanut pile – without the addition of any liquid water, *see* Rich Dep. p. 139; Schumacher Dep. pp. 151-52 – caused an intense chemical reaction, resulting in the LFL of phosphine gas being reached (18,000 ppm) and auto-ignition of that gas. Rich Expt. Rpt. p. 18; Schumacher Expt. Rpt. p. 13. Mr. Rich testified that “[t]here’s evidence that supports the fact that when [aluminum phosphide is] piled together the [chemical] reaction spirals out of control, it increases, the – the controls built into the Fumitoxin tablets by the manufacturer are subverted because it’s all clumped together, and the

reaction proceeds []to [a] runaway condition.” Rich Dep. p. 135. Mr. Schumacher testified that when aluminum phosphide tablets are piled together, the phosphine is generated “at such a rate that you’re creating a concentration that’s at the LFL that you wouldn’t normally have if you had a single tablet.” Schumacher Dep. p. 107.

Yet both experts conceded that four different published reports by certified testing laboratories have demonstrated the occurrence of ignition of piles of aluminum phosphide tablets only when liquid water was added to the pile.⁸ Rich Dep. pp. 138-42; Schumacher Dep. pp. 148-55. Both also acknowledged that testing undertaken by Defendants’ expert witness Dale Mann of MDE Forensic Laboratories demonstrated the occurrence of ignition of piles of aluminum phosphide tablets only when liquid water was added to the pile. Rich Dep. p. 141; Schumacher Dep. p. 155; *see* Mann Expt. Rpt. pp. 10-11.

Against this backdrop of historical testing, neither of Plaintiffs’ experts performed or commissioned any testing in an attempt to confirm or falsify their ignition theory. Rather, Mr. Rich performed what he described as a “cognitive test.” Rich Dep. pp. 152-53. Mr. Schumacher performed “thought experiments.” Schumacher Dep. p. 108. But as the cases above make abundantly clear, more is required to satisfy *Daubert* – much more. *See, e.g., Fireman’s Fund*, 767 F. Supp. 2d at 555 (simply “imagin[ing] a sequence of events” that would lead to ignition is “plainly insufficient”); *Gaskin*, 2007 U.S. Dist. LEXIS 65532, at *21, 24-25 (*NFPA 921*’s allowance for “cognitive testing” does not excuse the lack of experimental testing).

Significantly, the ignition theory Messrs. Rich and Schumacher posit was fully testable. Though Mr. Rich only begrudgingly agreed that a physical test could have been designed to

⁸ Underwriters’ Laboratories performed 125 tests with different configurations and piles of aluminum phosphide tablets. Spontaneous ignition occurred in only eight of those configurations, never in the absence of liquid water; indeed, during UL’s 1983 testing, ignition did not occur even when liquid water was added to the aluminum phosphide piles. *See* Mann Expt. Rpt. p. 11; Ryman Expt. Rpt. pp. 5-7.

determine whether ignition may occur from a pile of aluminum phosphide tablets, Rich Dep. pp. 145-50, Mr. Schumacher testified that he could have designed a test that would have produced ignition from a pile of aluminum phosphide tablets “almost every time It’s just a matter of science.” Schumacher Dep. p. 143. Indeed, he testified that if had undertaken the exact same testing Mr. Mann of MDE Laboratories had, albeit with additional Fumitoxin tablets, he would have proven his ignition theory. *Id.* at 125-26. Yet Mr. Schumacher did not undertake such testing because “I didn’t see the need to [do] it. There’s no value. I know it’s going to happen.” *Id.* p. 116; *see supra* pp. 10-11.

Thus, Plaintiffs’ experts seek to offer a causation opinion that is dependent on two entirely unverified theories – (1) that during the IFC application the Fumitoxin tablets would have piled on the peanuts’ surface in some unknown quantity; and (2) that unknown quantity would have been sufficient to cause ignition. Both theories are utterly devoid of scientific foundation. Neither Mr. Rich nor Mr. Schumacher have applied in this case the same “intellectual rigor” normally applicable to their field of expertise. *Kumho Tire*, 526 U.S. at 152. Their failure to test their ignition theory to demonstrate that the chemical reaction within “piled” aluminum phosphide tablets would have occurred in the manner they have theorized renders their opinions nothing more than their own *ipse dixit*. *Joiner*, 522 U.S. at 146. It is a sufficient basis for excluding their testimony “to observe that [they] performed no testing at all.” *Fireman’s Fund*, 767 F. Supp. 2d at 555.

3. *Plaintiffs’ experts’ ignition theory is not supported by peer-reviewed literature or generally accepted in the relevant scientific community.*

“The fact of publication (or lack thereof) in a peer-reviewed journal [is] a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.” *Daubert*, 509 U.S. at 594. Peer review and

publication by the scientific community “increases the likelihood that substantive flaws in methodology will be detected.” *Id.* at 593. Furthermore, “[w]idespread acceptance can be an important factor in ruling particular evidence admissible, and ‘a known technique which has been able to attract only minimal support within the community,’ may properly be viewed with skepticism.” *Id.* at 594 (citation omitted).

In the instant case, neither Mr. Rich nor Mr. Schumacher is aware of a single peer-reviewed scientific article which supports their ignition theory. Rich Dep. p. 136; Schumacher Dep. p. 144-45. As mentioned previously, they also acknowledge that every round of laboratory testing undertaken during the last 50 years has failed to establish ignition of piled aluminum phosphide tablets without the introduction of liquid water. They therefore cannot support their ignition theory by pointing to its general acceptance.

Rather, they attempt to support their ignition theory with the Degesch applicator manual’s cautionary statement that “[a]luminum phosphide tablets or pellets, outside their container should not be stacked or piled up or contacted with liquid water. This may cause a temperature increase, accelerate the rate of gas production, and confine the gas so that ignition could occur.”⁹ Rich Dep. p. 168; Schumacher Dep. pp. 276-77. As the Maryland district court made clear, however, a technical manual’s warning about what may happen under certain circumstances is insufficient under *Daubert* to provide a scientific basis for a causation opinion. *Peters-Martin*, 2008 U.S. Dist. LEXIS 123392, at *22. “Without testing or peer-reviewed publications to support [their] theories, [Messrs. Rich’s and Schumacher’s] opinions are just that

⁹ Notably, the material safety data sheet (“MSDS”) Degesch supplied for Fumitoxin, unlike section 4.2 of the Degesch applicator manual, provides that “[s]pontaneous ignition may occur if large quantities of aluminum phosphide or magnesium phosphide are piled **in contact with liquid water.**” Schumacher Dep. pp. 288-91 & Ex. 275, p. 2 (emphasis added). Similarly, Plaintiffs’ expert Dr. Brown’s Alabama Cooperative Extension System’s article “Fumigating Agricultural Commodities with Phosphine” states that fumigators should not leave “aluminum phosphide pellets or tablets in piles because doing so . . . increases the risk of explosion or fire **should the pile be suddenly exposed to water.**” *Id.* pp. 292-94 & Ex. 276, p. 6 (emphasis added).

– opinions. Unsubstantiated opinions fail to meet the standard set forth in *Daubert*.” *United Fire*, 2011 U.S. Dist. LEXIS 106595, at *8; *see Gaskin*, 2007 U.S. Dist. LEXIS 65532, at *27 (ignition theory not subjected to peer review or which has not gained general acceptance properly excluded under *Daubert*.).

4. Mr. Rich’s opinion was formed prematurely – prior to discovery – resulting in impermissible expectation bias.

Plaintiffs brought this action on April 8, 2011. (DE #1). On July 13, 2011, nearly six months before discovery commenced, Mr. Rich was deposed in the case of *E.J. Cox Company, Inc. v. Pestcon Systems, Inc.* Rich Dep. p. 110; *id.* Ex. 194. As of that date, Mr. Rich had already concluded that the IFC applicators misapplied the Fumitoxin in the peanut dome, thereby resulting in the formation of a “very large pile of tablets,” which in turn created sufficient heat to raise the temperature of the peanuts to their ignition temperature. Rich Dep. pp. 111-13; *id.* Ex. 194, p. 226-27. Indeed, as of July 13, 2011, Mr. Rich had already concluded that the Fumitoxin piles left by the IFC applicators consisted of at least 250 tablets each. Rich Dep. pp. 114-16; *id.* Ex. 194, p. 247.

Even though he had clearly formed his opinion regarding the origin and cause of the peanut dome fire by July 2011, Mr. Rich testified under oath during his July 2013 deposition in this case that he first formed his causation opinion on April 30, 2013, “the day I prepared the [expert] report.” Rich Dep. p. 94. Indeed, before the undersigned defense counsel confronted him with his contrary testimony in the *E.J. Cox* case, Mr. Rich testified as follows:

- Q When did you acquire at least as much of the facts that you needed to get to form an opinion in your mind that the Fumitoxin is what caused the fire?
- A I don’t know how to answer that. I mean, it’s a – it’s a process. And I would say sometime shortly before this [expert] report was prepared.
- Q And so in 2013 is when you formed that opinion in your mind?
- A I would say that’s when it solidified in my mind, yes, and then when I went to write it out, yes.

- Q So if somebody had asked you before 2013 what caused this fire, you would have said, I don't know?
- A I may have said I think it's the Fumitoxin or the Fumitoxin could be a potential fire cause. But I don't know that I would have said it's just the Fumitoxin.

Id. pp. 95-96 (emphasis added).

There is a good reason why Mr. Rich would not admit that he formed his causation opinion before discovery even commenced: *NFPA 921* provides that the premature formation of a fire causation opinion renders that opinion at the very least suspect, if not invalid altogether:

Expectation bias is a well-established phenomenon that occurs in scientific analysis when investigator(s) reach a premature conclusion too early in the study and without having examined or considered all of the relevant data. Instead of collecting and examining all of the data in a logical and unbiased manner to reach a scientifically reliable conclusion, the investigator(s) use the premature determination to dictate their investigative processes, analyses, and, ultimately, their conclusions, in a way that is not scientifically valid. The introduction of expectation bias into the investigation results in the use of only that data that supports this previously formed conclusion and often results in the misinterpretation and/or the discarding of data that does not support the original opinion.

NFPA 921 § 4.3.8. Yet it is clear from his testimony in the *E.J. Cox* case that Mr. Rich did prematurely arrive at his causation opinion – before Messrs. Turner and Lilley were deposed, before numerous employees from SPC were deposed, and before the lead fire fighter Chauncey Naylor was deposed.¹⁰ Having already decided what caused the fire, Mr. Rich unavoidably filtered the information contained in those depositions through his predetermined opinion – rather than constructing his opinion from his review of that information as *NFPA 921* and the scientific method require. Indeed, Mr. Rich candidly agreed that it “would be important” not to form an opinion regarding fire causation “before examining the under-oath testimony of those who had personal involvement in the events leading up to the fire.” Rich Dep. p. 108. Yet that

¹⁰ Mr. Rich's report reveals that he reviewed the transcripts from 17 depositions prior to issuing his report – none of which had been taken as of July 13, 2011. Rich Expt. Rpt. pp. 20-21.

is precisely what he did. Because “it is unmistakably clear that [Mr. Rich] developed his opinions well before the facts underpinning this case were developed . . . [his] opinions must be deemed unreliable and thus inadmissible as expert testimony.” *State Farm Fire & Cas. v. Jarden Corp.*, 2010 U.S. Dist. LEXIS 60327, at *12 (S.D. Ind. June 16, 2010).

CONCLUSION

For all of the foregoing reasons, Defendants respectfully request that the Court enter an order excluding Mr. Lester Rich and Mr. John Schumacher from providing expert opinion testimony regarding the origin and cause of the fire in the peanut storage dome.

This the 7th day of November, 2013.

POYNER SPRUILL LLP

By: s/ Steven B. Epstein
Steven B. Epstein
N.C. State Bar No. 17396
Email: sepstein@poynerspruill.com
301 Fayetteville Street, Suite 1900
Raleigh, NC 27601
Telephone: 919.783.2846
Facsimile: 919.783.1075
ATTORNEYS FOR DEFENDANTS

CERTIFICATE OF SERVICE

I hereby certify that I have this day electronically filed the foregoing with the Clerk of Court using the CM/ECF system which will send notification of such filing to all counsel and parties of record as follows:

Howard M. Widis, Esq.
Quick, Widis & Nalibotsky, PLLC
2115 Rexford Rd., Suite 100
Charlotte, NC 28211
Email: hwidis@qwnlaw.com

This the 7th day of November, 2013.

s/ Steven B. Epstein

Steven B. Epstein